

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-29 (Cancelled)

Claim 30 (New): A master disk comprising:

a master substrate; and

a layer of photosensitive material covering at least a portion of the master substrate, the photosensitive material including a master pattern defined by adjacent master lands and master grooves, wherein the master grooves extend down to the master substrate, wherein the master grooves define master groove bottoms and the master lands define master land tops, and wherein a track pitch of the master pattern is less than 425 nanometers and a width of the groove bottoms is greater than 25 percent of the track pitch.

Claim 31 (New): The master disk of claim 30, wherein the master groove bottoms are flat and coplanar and wherein the master groove bottoms include sharp corners.

Claim 32 (New): The master disk of claim 30, wherein the master grooves define a groove depth which is approximately equal to a thickness of the layer of photosensitive material and the master grooves extend down to the master substrate.

Claim 33 (New): The master disk of claim 30, wherein the master grooves define a groove depth between 20 and 120 nanometers.

Claim 34 (New): The master disk of claim 30, wherein the width of the groove bottoms is greater than 35 percent of the track pitch.

Claim 35 (New): The master disk of claim 34, wherein the width of the groove bottoms is greater than 50 percent of the track pitch.

Claim 36 (New): A master disk comprising:

a master substrate; and
a layer of photosensitive material covering at least a portion of the master substrate, the photosensitive material including a master pattern that is inverse of a desired replica pattern, the master pattern defining a track pitch less than 2 multiplied by a laser spot size associated with a laser used to perform laser etching of the master pattern in the photosensitive material, wherein the master pattern is defined by adjacent master lands and master grooves and wherein the master lands correspond to grooves of the desired replica pattern and the master grooves correspond to lands of the desired replica pattern, wherein the master grooves extend down to the master substrate such that master groove bottoms are flat and coplanar so that land tops of the desired replica pattern are flat and coplanar.

Claim 37 (New): The master disk of claim 36, wherein a track pitch of the master pattern is less than 700 nanometers.

Claim 38 (New): The master disk of claim 36, wherein a track pitch of the master pattern is less than 425 nanometers and a width of the master groove bottoms is greater than 25 percent of the track pitch.

Claim 39 (New) The master disk of claim 38, wherein the width of the groove bottoms are greater than 35 percent of the track pitch.

Claim 40 (New) The master disk of claim 36, wherein the master groove bottoms are flat and coplanar and wherein the master groove bottoms include sharp corners.

Claim 41 (New) The master disk of claim 36, wherein the track pitch is less than 1.6 multiplied by the laser spot size.

Claim 42 (New) The master disk of claim 36, wherein the master pattern further includes one of pits, bumps and ridges.

Claim 43 (New) The master disk of claim 36, wherein the master groove bottoms define widths between 80 and 200 nanometers.

Claim 44 (New): A master disk comprising:

a master substrate; and

a layer of photosensitive material covering at least a portion of the master substrate, the photosensitive material including a master pattern that is inverse of a desired replica pattern, the master pattern defining a track pitch less than 2 multiplied by a laser spot size associated with a laser used to perform laser etching of the master pattern in the photosensitive material, wherein the track pitch is less than 700 nanometers.

Claim 45 (New): The master disk of claim 44, wherein the master pattern defines master lands and master grooves wherein a track pitch of the master pattern is less than 425 nanometers and a width of bottoms of the master grooves is greater than 25 percent of the track pitch.

Claim 46 (New) The master disk of claim 45, wherein the width of the bottoms of the master grooves is greater than 35 percent of the track pitch.

Claim 47 (New) The master disk of claim 44, wherein the master pattern defines master lands and master grooves and wherein the master grooves define bottoms that are flat and coplanar and wherein the master groove bottoms include sharp corners.

Claim 48 (New) The master disk of claim 44, wherein the track pitch is less than 1.6 multiplied by the laser spot size.

Claim 49 (New) The master disk of claim 44, wherein a depth of the master grooves is less than an initial thickness of the photosensitive material prior to the laser etching.